

Analysis of citation rate of papers with titles containing a country name

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Abstract

Choosing the right title for a paper is essential for attracting readers and receiving citations, and various studies have been done on this subject. This research sought those papers citation rate with the country name 'Iran' in their title published during 2010-2014 using Web of Science citation index. It tried to identify highly cited papers, disciplines, distribution of papers by type and geography of the paper with this feature. Moreover, it observed the relationship between Iranian and international authors in the production of such papers and their citation rate. Using scientometric method, 12,026 papers with the word 'Iran' in the titles were examined, and their Web of Science database citations were analyzed from 2010 to 2014. Citation rates of papers written by Iranian researchers and researchers from other countries were compared according to the research questions. The results showed that the majority of these papers were produced in Iran, and among foreign countries, the United States had the highest share in producing such papers. Most of these papers were in geology, occupational health, and environmental science. Moreover, it was revealed that citation rate for papers containing Iran in the title has decreased over the years and the downward trend has been similar for national and international studies.

Keywords

Scientific paper; Citation analysis; Title; Country name; Iran.

Introduction

Researchers commonly aim to attract citations as an indicator of their impact on the scientific field. Various factors may affect citation rate, including quality, subject, study type, journal of publication, and even the number of authors (Falagas et al., 2013; Jacques & Sebire, 2010; Hamilton, 1991). The formal characteristics of the paper, such as title, abstract and keywords, are also important in the number of citations (Jamali & Nikzad, 2011; Goldacre, 2011; Hartley, 2008; Hudson, 2016). Choosing the right title and keywords as well as the quality of the paper can be crucial, and in some cases, the use of certain words in the title can reduce the citation rate (Ahmed et al., 2013).

The title of a paper is a window to the papers content (Slafer, 2008). The present research is an analysis of the effect of using a country name in a papers title (a case of Iran) on its citation rate. Given the growth in Iran's science production (Akhondzadeh, 2013; Kharabaf & Abdollahi, 2012; USERN, 2016) as well as the political issues surrounding this country, the purpose of this research is to examine the citation rate of papers with the word 'Iran' in their title over the period 2010-2014 using the Web of Science (WOS) citation index, and compare the citation rates of Iranian and foreign papers with this feature. If further attempts to identify highly cited papers, disciplines, distribution of papers by type and geography. Finally the relationship between Iranian and international authors in the production of such papers and their citation rate is examined.

Literature review

There have been many studies on the visibility of papers and their citation rates through examining various factors such as number of authors, paper length, download rates, keyword choice in titles, and disciplines. Some studies that exclusively focused on the titles of papers are as follows: Cloft et al. (2001) performed a survey in the Medline and showed that the use of the keyword 'preliminary' or 'pilot' in the title leads to less citation rates in important journals. Ahmed et al. (2013) examined the use of the term 'initial clinical experience' in 531 papers and found that the use of such a term results in lower citation rate and can negatively affect the journals impact factor. They also argued that the use of a country name in the title has a similar outcome and special care must be taken to keyword choice in the title. Jamali and Nikzad (2011) and Goldacre (2011) agreed that the title of papers can affect their visibility. In contrast, other factors that may affect citation rate and visibility have also been examined. Jamali and Nikzad (2011) examined 2,172 papers from six journals aiming to found out the impact of the type of paper titles (descriptive, declarative, and interrogative) on the number of citations and download rate. They found that differences exist between papers with diverse types of titles in terms of downloads and citations, and papers with question titles tended to be downloaded more but cited less than other papers. Moreover, it was revealed that shorter titles were downloaded more than

longer ones, and also using colon in the titles ended with less citation and download. Also the number of downloads and citations were found to be positively correlated (Jamali & Nikzad, 2011). Similarly, Falagas et al. (2013) examined 196 papers and reported that title word count affects the impact of the paper. Hartley (2008) listed 13 types of titles that emphasize various elements of the paper such as the general subject, the hypothesis, the findings, and the methodology, and some title types were shown to be more attractive than others. Goldacre (2011) distinguished between three title styles that reflect the three stages of science: question, method and result. Interrogative titles are mainly used to arouse curiosity, descriptive titles give the method but not the answer, and declarative titles give the main conclusion. He also found that descriptive titles were the most common, and papers with question marks in the title tended to be downloaded more, but cited less.

According to Hudson (2016), longer titles are more informative, but less attractive, and using a colon may facilitate the problem and strike a balance between these two elements. By analyzing 155,500 papers published in British journals, he found that paper length increases with the number of authors, and the use of question marks and colons tends to decline with an increase in the number of authors. Habibzadeh and Yadollahie (2010) examined the titles of 9,031 papers from 22 journals and concluded that papers with longer titles are cited more. Medium-length titles and titles containing colons have become more common, and the number of authors is, generally, associated with longer titles. According to Goldacre (2011), long titles may reflect squabbles or a desire for clarity. However, Jacques and Sebire (2010) came to completely different conclusions. They studied 25 most cited and 25 least cited papers published in 2015 in medical journals and found that the number of citations was positively associated with title length as well as the presence of a colon or acronym in the title. They also found that reference to a specific country in the title is associated with poor citation. Accordingly, the title of a paper can be critical to its visibility and citation rate.

Research Questions

The present research aims to answer the following questions with regard to the country name, 'Iran', in the papers' title:

1. How much papers with the word 'Iran' in their title exist in the WOS database over the period 2010-2014?
2. Which countries have published the highest number of papers with the word 'Iran' in their title?
3. What type of documents with the word 'Iran' in the title are published in the WOS?
4. What is the distribution of these papers across different disciplines?
5. What is the citation rate of these papers?

6. Are there differences between the citation rates of national and international papers containing the word 'Iran' in their title?

Materials and Methods

This research was conducted using the scientometric method. The population consisted of 12,026 papers with the word 'Iran' in their title, indexed in the WOS database during 2010 - 2014 in all indexes, i.e. Science Citation Index, the Social Sciences Citation Index and Arts and Humanities Citation Index. To access bibliographic data, we accessed the WOS website, used the word 'Iran' in the record title, limited the results to 2010-2014 in all indexes, and searched for the most relevant results. The search of word 'Iran' also provided results with words such as 'Iranian' or 'Irani'. To search exclusively for papers produced in Iran, the Countries/Territories option was set to Iran, and again the results were limited to 2010-2014. Data were retrieved from November 5 to November 7, 2016, and analyzed in the Excel 2010.

Results

Q1. How many papers with the word 'Iran' in their title exist in the WOS database over the period 2010-2014?

Figure 1 shows the frequency and percentage of these papers by publication date. From 2010 to 2014, the total of 12,026 papers with the word 'Iran' in their title have been published, with the highest number of papers published orderly in 2012 (2,585 papers; 21.49%), 2011 (2,560 papers; 21.28%), 2013 (2,483 papers; 20.64%), and 2014 (2,324; 19.32%). The fewest papers were published in 2010 (2,074 papers; 17.24%).

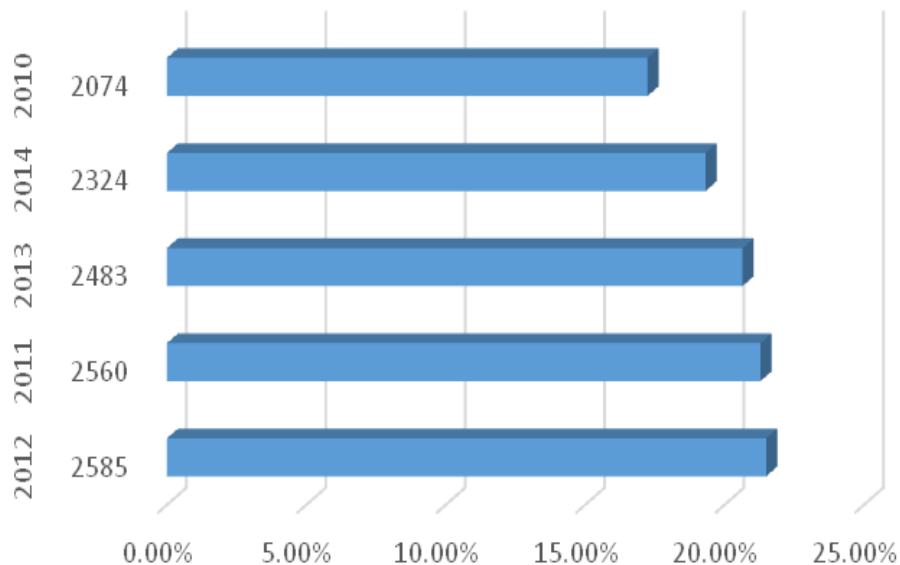


Figure 1. Frequency and percentage of papers with the word 'Iran' in their title by publication date

Q2. Which countries have published the highest number of papers with the word ‘Iran’ in the title?

Surveys show that out of 12,026 papers, 10,011 papers (83.25%) belonged to Iran, and 2,015 papers (16.75%) belonged to other countries. Figure 2 shows the frequency of these papers in top 10 countries: the USA (976 papers), the UK (370 papers), Germany (335 papers), Canada (233 papers), Australia (217 papers), Malaysia (208 papers), France (190 papers), Italy (171 papers), and Sweden (144 papers).

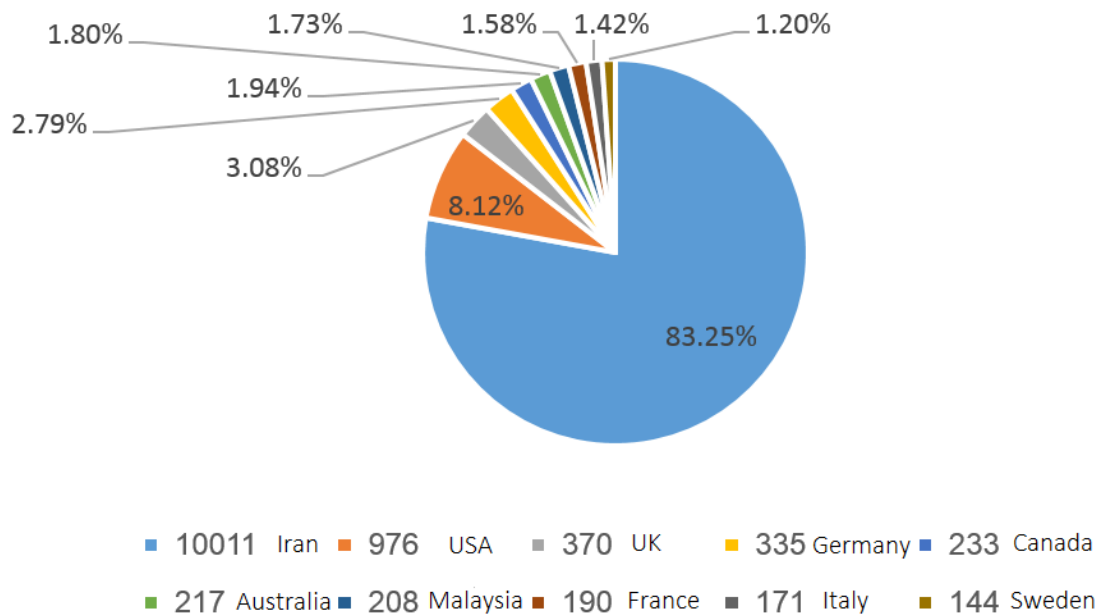


Figure 2. Percentage of published papers by country

Q3. What type of documents with the word ‘Iran’ in their title are published in the WOS database?

Based on Figure 3, papers are the most common type of document with the word ‘Iran’ in their title in the WOS database (8,866), followed by meeting abstracts (1,105), conference papers (749), book reviews (450), and book chapters (366). The least common document types are art exhibit reviews (9), biographies (4), and record reviews (2). Papers are the main channel for communicating the scientific findings, and naturally, most of the scientific production has been in the form of papers, which is usually followed by conference papers, but not in the case of the present research.

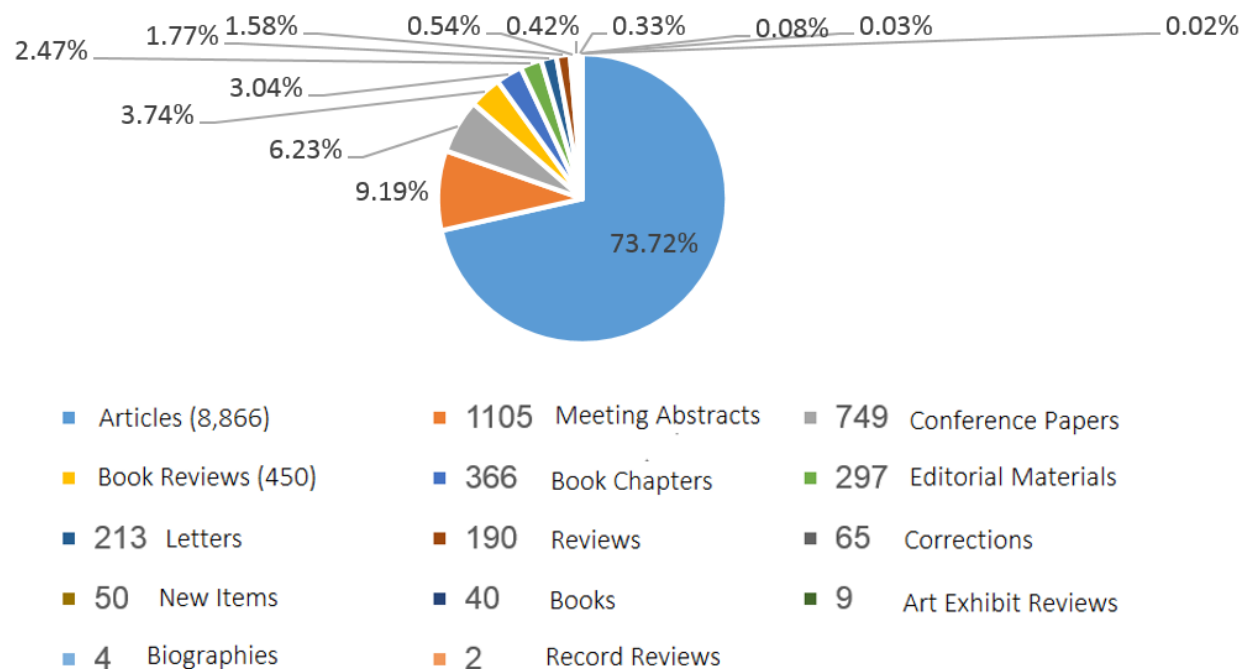


Figure 3. Frequency and percentage of papers by type

Q4. What is the distribution of papers with the word 'Iran' in their title across different disciplines?

Figure 4 shows among the 25 disciplines that have used the word 'Iran' in their title, the most common disciplines are geology (964 papers), occupational health (875 papers), environmental sciences (770 papers), agriculture (673 papers), and general internal medicine (642 papers). The presence of biology and medicine is more pronounced than humanities and engineering.

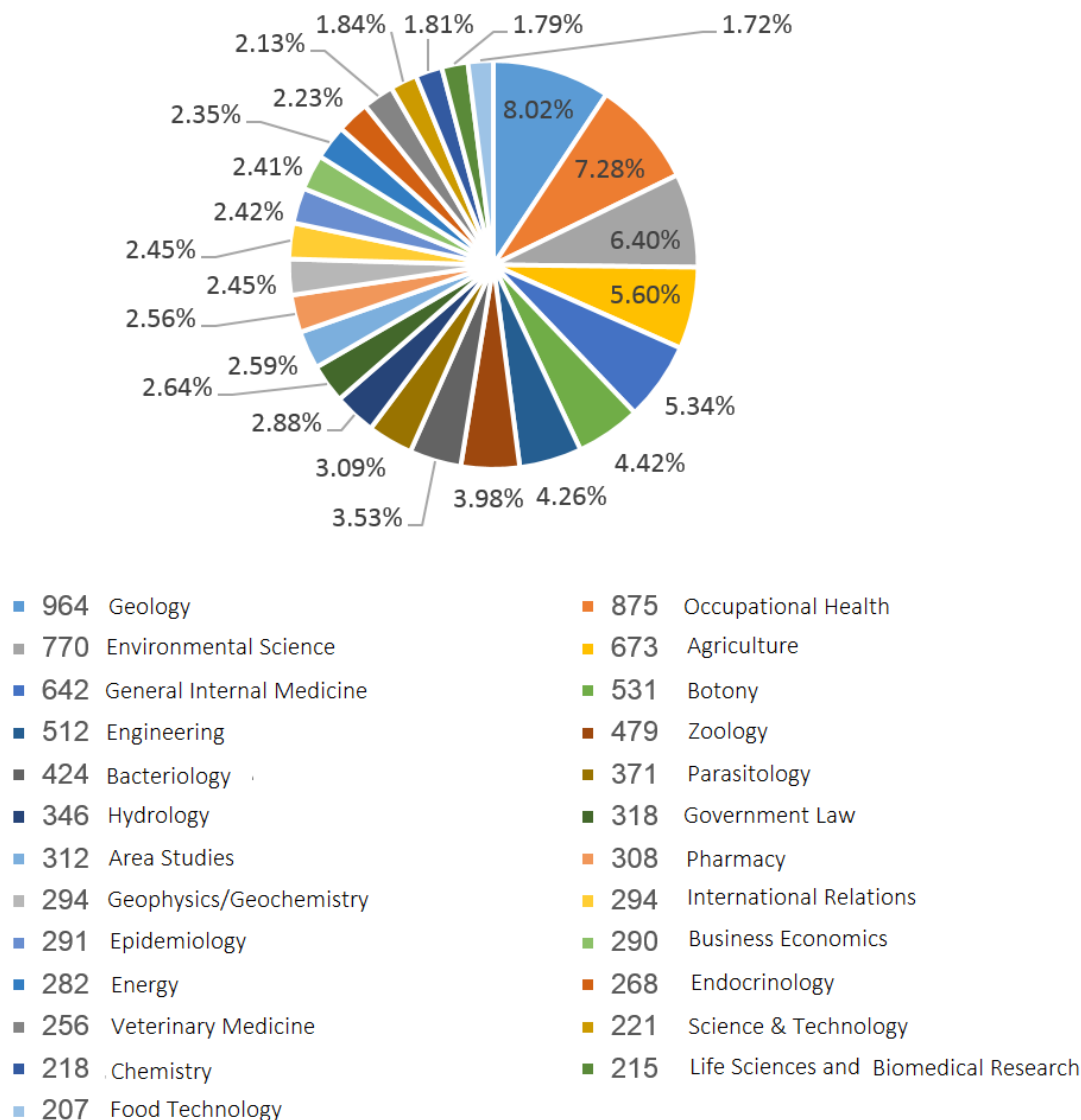


Figure 4. Frequency and percentage of papers by discipline

Q5. What is the citation rate of papers with the word 'Iran' in their title?

Table 1 indicates the citation rate of papers produced in Iran and other countries. The results revealed that the citation rate of papers with the word 'Iran' in their title has decreased from 10,460 in 2010 to 8,985 in 2011, 7,843 in 2012, 6,300 in 2013, and 3,890 in 2014. This downward trend can be due to the fact that fewer papers have had the chance of being cited over time (Figure 5). The mean citation ratio from 2010 to 2014 was 6.26, 4.22, 3.63, 3.08, and 1.94, respectively. By removing self-citations, a downward trend is again observed from 2010 to 2014 (10,376, 8,869, 7,740, 6,168, and 3,708).

Table 1. Comparison of the citation rates for papers published in Iran and other countries during 2010-2014

Year	2010			2011			2012			2013			2014			Total
	Total Citations	Self-Citations	Without Self-Citations	Total Citations	Self-Citations	Without Self-Citations	Total Citations	Self-Citations	Without Self-Citations	Total Citations	Self-Citations	Without Self-Citations	Total Citations	Self-Citations	Without Self-Citations	
Iran	10460	84	10376	8989	116	8869	7843	103	7740	6300	132	6168	3890	110	3780	37478
Other Countries	827	14	813	854	4	850	725	4	721	600	7	593	343	6	337	3349
Total	11287			9839			8568			6900			4233			40827

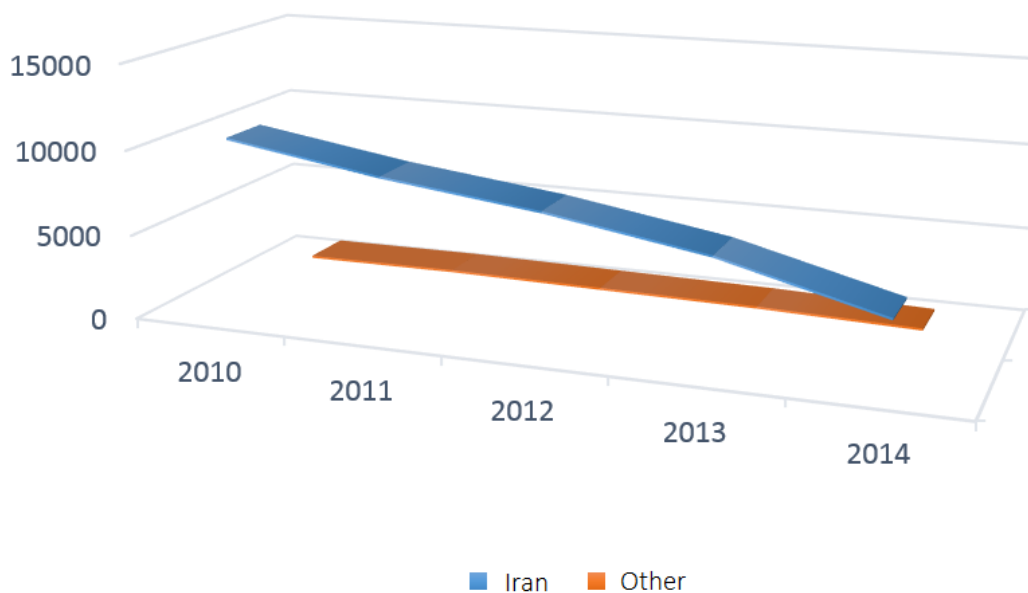


Figure 5. Citation trends for papers published in Iran vs. other countries

Similar studies conducted in other countries reported the same trend. The results indicated that the number of citations to these papers was 827 in 2010, 854 in 2011, 725 in 2012, 600 in 2013, and 343 in 2014 (Figure 5). The rate of repeated citations for papers published in Iran was 2.06 in 2010, 1.99 in 2011, 1.70 in 2012, 1.37 in 2013, and 1.08 in 2014. After deducting self-citations, the number of citations was as follows: 813 in 2010, 850 in 2011, 721 in 2012, 593 in 2013, and 337 in 2014.

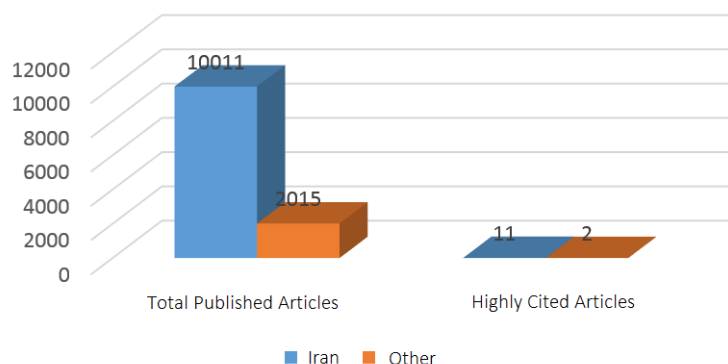


Figure 6. Highly cited papers from Iran and other countries

The data in Figure 6 show that 13 papers are highly cited, 11 from Iran and two from other countries (with two American, one British, one Canadian, and one Taiwanese authors).

Q6. Are there differences between the citation rates of national and international papers containing the word 'Iran' in their title?

The data in Table 2 indicates that the total of 12,026 papers have been published from 2010-2014 with the word 'Iran' in their title. The highest number of papers was in 2012 and the least number was in 2010. It appears that the number of papers has decreased since 2013. On the other hand, Table 1 shows that these papers have been cited 40,287 times. As shown in Table 1, citations had decreasing trend in both Iran and other countries. The number of citations for Iranian papers has decreased from 10,460 in 2010 to 3,890 in 2014. The same trend can be observed for the papers published in other countries, with the number of citations decreasing from 827 in 2010 to 343 to 2014. While the number of papers has been almost similar in these years, the number of citations has declined. Thus, it can be argued that there is a negative correlation between the number of papers with the word 'Iran' in their title and the citation rate.

Table 2. Number of citations to papers with the word 'Iran' in their title (2010-2014)

Year	Citations		Papers
	Iran	Other Countries	
2010	10,460	827	2,074
	11,287		
2011	8,985	854	2,560
	9,839		
2012	7,843	725	2,585
	8,568		
2013	6,300	600	2,483
	6,900		
2014	3,890	343	2,324
	4,233		
Total	40,827		12,026

Discussion

In the current research 12,026 papers with the word 'Iran' in the title were studied, most of which (10,011 papers) were published in Iran. This result was expected as it seemed that the most research was about a special part or a specific subject of Iran; so the authors have used this word in the title to give more detailed information at the first sight and differentiate them from others with the same subject. Besides, among the foreign countries, the USA had the highest share in producing such studies (976 papers), showing the strong scholarly communication between these two countries. This means that Iran and the USA had more scholarly cooperation than other countries as was reported previously by Moradi (2010).

Moreover, publishing in journals is the formal channel of scholarly communication (Harter & Kim, 1997), which can prove why most of the papers with 'Iran' in the title were journal papers (8,866 cases) in the current research. Furthermore, the results showed that geology, occupational health, and environmental sciences were the most common disciplines, indicating the interest in case studies on specific aspects of Iran's geology, health, and environment. The word 'Iran' was mostly used in sub-titles or additional titles providing more detail to readers and also, in case studies, to distinguish the study from others, geographically.

The present research results further showed that the number of citations to papers with the word 'Iran' in the title has decreased from 2010 to 2014. This is consistent with the findings of Ahmed et al. (2013) and Cloft et al. (2001), who showed that the use of certain words in the title may reduce citation rate. Also it was revealed that the number of papers with the word 'Iran' in the title has steadily decreased. Therefore, there is a negative correlation between the number of such papers and the number of citations to these papers. So, it may not be a good idea to use a country's name in the title of a paper. Similar to Jamali and Nikzad (2011) and Goldacre (2011), we found that title can affect citation rate. It is worth be noting that citation rate, by its very nature, depends on time, and a five-year period may have been insufficient for such an analysis. Also, the very mention of Iran may be a reason for poor visibility and low citation rate of such papers and therefore, it is not suggested to use it in the title of papers. The results of a study by Abramo, D'Angelo and Di Costa (2016) based on Italian scientific papers indexed in the WOS showed that publications with a country name receive lower impact values systematically.

In addition, all papers examined in this study were indexed in the WOS database, and it seems that inclusion of these papers in scientific social networks such as ResearchGate or Mendeley can possibly increase their visibility and citation rate. The data shows that participation of Iranian researchers and researchers from other countries (e.g., the USA, Canada, Australia, and the UK) had apparently no significant effect on the visibility and citation rate of the papers over the studied period (2010-2014).

Conclusion

It must be noted that all papers beginning with a title and writing a good title is not an easy task (Hartley, 2008). That is the first part of a paper that is read the most. The wording of the title can have a significant role in attracting readers and citations as there are still some readers who judge a book by its cover, which sometimes is the only determinant to decide whether to read or skip a paper.

An effective title must provide useful information so that the paper shows up in the reader's queries. It must disclose content in a few words, distinguish paper from other similar one, and capture the readers' attentions. The bottom line is that the success of a paper in getting citation depends on a variety of factors, the most important of which is its quality; however, Sinatra et al. (2016) considered the chance as one of the important factors in the number of citations to a scientific paper.

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